



Form 2

High-Accuracy 3D Printing
for Dental Labs and Practices

formlabs 

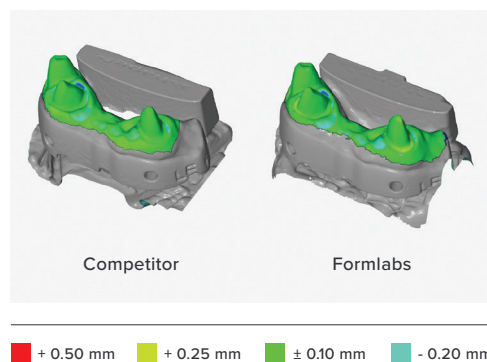


Industrial 3D Printing on Your Desktop

The Form 2 stereolithography 3D printer makes industrial 3D printing affordable for dental businesses of all sizes, enabling cost-effective, mass-customized digital production of a wide range of dental products.

PROFESSIONAL PRECISION

Our library of standard and biocompatible resins are specifically tuned to meet the performance, precision, and accuracy needs of high precision dental indications. A finely-tuned optical system and streamlined user experience ensure precise prints straight out of the box.



The precision of Dental Model Resin, our most accurate material, is on par with established, large-format dental 3D printers in the \$75,000 price range.

- Overall global accuracy was found to be within ± 100 microns over 90% of surfaces.
- Margins and contact points were accurate within ± 35 microns of the digital model over 80% of surfaces when printed on 25 micron settings.

SIMPLE MATERIAL SWAPPING WITH A GROWING RANGE OF APPLICATIONS

A single printer can be used for a wide range of applications with our library of Dental Resins. Swap automated resin cartridges and interchangeable resin tanks in less than a minute, with no mess or wasted material. New software and materials are constantly under development.



FAST RETURN ON INVESTMENT

Affordable materials and low equipment cost make Formlabs 3D printers the cost-effective digital manufacturing choice for dental businesses of any size. Get a return on your investment within months, rather than years.

“The Form 2 has enabled our restorative practice to use precision surgical guides at a fraction of the cost previously attainable. We now utilize three Form 2 printers for surgical guide and medical model production. The return on investment has been a ridiculously short two months for the first two printers, and just three weeks for third printing models. Our Form 2s have given us the ability to satisfy our core principles of quality care and CBCT justification in a truly cost effective manner for all of our patients.” **Dr. Timothy Hart, DDS, MS, Prosthodontist**

DENTAL MODEL RESIN		DENTAL SG	
Quad Model Kit: Upper, Lower, and Die	\$2.00 – 3.00	Full Arch Surgical Guide	\$3.00 – 5.00
Full Model Kit: Upper, Lower, and Die	\$3.00 – 5.00	Quarter Arch Surgical Guide	\$1.50 – 2.50
DENTAL LT CLEAR		GREY	
Splint	\$3.00 – 5.00	Horseshoe Arch	\$3.00
CASTABLE WAX			
Full Contour Crown	\$0.50		

RELIABLE, 24/7 PRODUCTION

A powerhouse of productivity, the Form 2 is designed and rigorously tested for continuous, 24/7 production. Thousands of customers already rely on the Form 2 for their business needs.

“Over 200 guides printed with only 2 failures. Amazing.”

Dr. Pierre Obeid, BSc, DDS, Leamington Sedation Dentistry

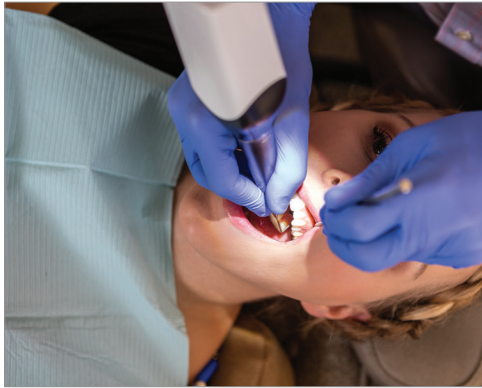
SCALABLE PRINT CELLS THAT GROW WITH YOU

Pay for exactly as much production capacity as your business needs. Scale production by adding printers as you need them, without making a big investment in a large-format machine. Wireless connectivity, a small desktop footprint, and cloud-based printer management through Dashboard make it easy to manage a cell of several printers.

“We started with the Form 2 instead of going to a \$35,000 printer simply because I couldn’t see a lot of difference in what one did vs. the other. We decided to get a second printer since the cost was low enough that it was easy to do. Now we have four printers here with different materials for different applications.” **Matt Roberts, CDT, CMR Dental Lab**

The Digital Workflow

Go from patient scan to 3D print to ready-to-use dental product in a matter of hours. All 3D printed dental products follow the same basic steps.



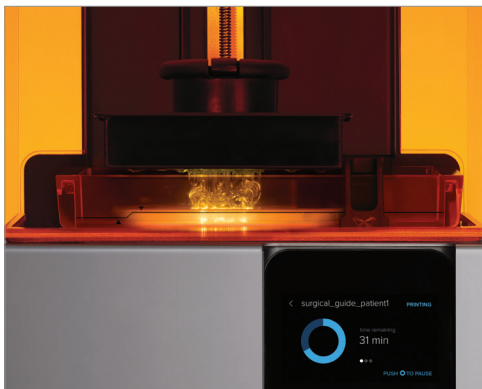
1. SCAN

Capture patient anatomy digitally using an intraoral scanner. Alternatively, digitally capture impressions or stone models using a desktop optical scanner. For treatments that require it, use a CBCT scanner to capture patient osteotomy.



2. DESIGN

The Form 2 is compatible with any dental CAD software that allows open export of digital design files. The design phase ends with the export of the digital model as an STL or OBJ file. See the dental applications guides on our website for design guidelines for specific applications.



3. 3D PRINT

Import the STL or OBJ file into our free PreForm print preparation software. Use PreForm to orient the parts, generate supports, and lay out the build. Upload the job to a Form 2 printer and start the print.



4. PREPARE

When the print is completed, remove the build platform from the printer. Rinse parts in isopropyl alcohol (IPA), post-cure, then finish using standard dental polishing tools.

Visit our Formlabs Dental page to learn more: formlabs.com/dental



Surgical Guides

Perform precise, cost-effective surgeries with better clinical outcomes.

Tried and tested by thousands of dental professionals, Dental SG Resin is an autoclavable, Class 1 biocompatible resin, designed for 3D printing precise surgical guides. Take advantage of digital implantology to reduce chairside time, improve patient experience, and achieve high-precision implant placement with ease.

BENEFITS

- ✓ Guided surgery for as little as \$1.50 – 2.00 per guide
- ✓ Autoclavable in industry standard sterilization units
- ✓ Easier, faster surgeries

ACCURACY STUDY

This difference map shows a 3D scan of the printed surgical guide overlaid with the original 3D model. The color mapping indicates differences, with the green areas revealing dimensional accuracy within ± 50 microns. In our study, we scanned 84 surgical guides printed with Dental SG Resin with a desktop scanner and compared with the STL files of the intended models. Results showed that printed models were dimensionally accurate within ± 100 microns over 93% of the surface area, providing a precise fit for dental surgical applications.

■ +/- 50 microns ■ +/- 100 microns ■ +/- 200 microns



QUATER ARCH SURGICAL GUIDE	\$1.50 – 2.50 / PART
29 guides / build	3 hr
1 guide / build	44 min
FULL ARCH SURGICAL GUIDE	\$3.00 – 5.00 / PART
8 guides / build	3 hr 30 min
1 guide / build	1 hr 19 min

Based on parts printed on the Form 2 at 100 μ m layer height.

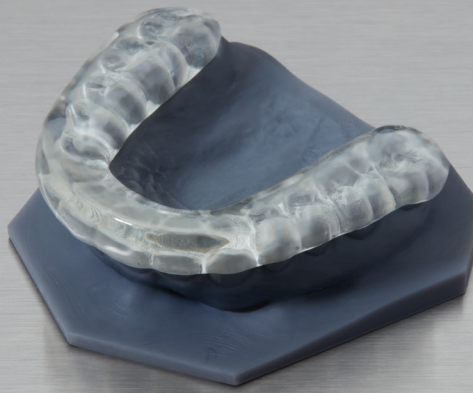
BIOCOMPATIBILITY

Dental SG is a Class I biocompatible resin that adheres to the following ISO standards:

EN-ISO 10993-1:2009/AC:2010

EN-ISO 20795-1:2013

EN-ISO 7405:2009/A1:2013



Occlusal Guards and Splints

Directly print strong, wear-resistant splints and occlusal guards.

Manufacture affordable, high-quality occlusal guards and splints in-house with Dental LT Clear Resin. A Class IIa long-term biocompatible resin with high resistance to fracture, this clear material polishes to high optical transparency for a finished appliance you'll be proud to deliver.

BENEFITS

- ✓ High quality splint in 50 minutes, for \$3.00 – 5.00 per part
- ✓ Optically transparent clear color
- ✓ Mechanical properties compliant with ISO 20795-2:2013

ACCURACY STUDY

An in-depth accuracy study of 80 splints printed in Dental LT Clear Resin showed that intaglio surfaces were dimensionally accurate within ± 100 microns on over 80 percent of the part.

■ +/- 50 microns
 ■ +/- 100 microns
 ■ +/- 200 microns



SPLINT / RETAINER	\$3.00 – 5.00 / PART
7 guides / build	2 hr
1 guide / build	50 mins

Based on parts printed on the Form 2 at 100 μ m layer height.

BIOCOMPATIBILITY

Dental LT Clear is a Class IIa biocompatible resin that conforms with the essential requirements and provisions of the Council Directive 93/42/EEC concerning medical devices as amended by Directive 2007/47/EC, and conforms with the following standards:

EN ISO 1641:2009
 EN-ISO 10993-1:2009/AC:2010
 EN-ISO 10993-3:2009
 EN-ISO 10993-5:2009
 EN 908:2008



Crown and Bridge Models

Print high-accuracy removable die models with precision and consistency.

With crisp margins, precise contacts, and consistent occlusions, Dental Model Resin is a high-performance material for printing crown and bridge models with removable dies. Smooth surface finish, hardness, and color similar to gypsum make it easy to switch from analog to digital model production. With a per-model production cost competitive with stone models, the switch makes business sense.

BENEFITS

- ✓ Print accurate margins and contacts within ± 35 microns using 25 micron print settings
- ✓ Smooth surface finish with color and hardness like analog stone
- ✓ Insert removable dies with consistently tight fit

ACCURACY STUDY

An in-depth study of 32 printed dies found margins and contact points to be accurate within ± 35 microns of the digital model over 80 percent of the die surfaces when printed on 25 micron print settings. Global accuracy across a full arch guide was found to be ± 100 microns over 90 percent of the surfaces.

■ +/- 50 microns ■ +/- 100 microns ■ +/- 200 microns



QUAD CASE	\$2.00 – 3.00 / PART	FULL ARCH CASE	\$3.00 – 5.00 / PART
8 cases (3 parts each) / build	8.5 hr	2 cases (5 parts each) / build	8 hr
1 case / build	3 hr	1 case / build	5.5 hr

Based on parts printed on the Form 2 at 100 μ m layer height.



Patterns for Casting and Pressing

3D print highly accurate patterns for crowns and bridges, copings and substructures, and RPD frames.

Tested at length by dental technicians, Castable Wax Resin provides accurate, sealed margins and contains 20% wax for reliable casting with clean burnout. Printed patterns are strong enough to handle with no post-cure required, allowing for a faster, simpler workflow.

BENEFITS

- ✓ Accurate fit to abutments with sealed margins
- ✓ Best cost per part and equipment cost in the industry
- ✓ Industry-leading ease of use



“Castable Wax Resin fits seamlessly into my existing workflow and complements my milling machine perfectly. It allows me to print removable partial denture patterns for casting or even crown and bridge patterns for pressing. The material burns out cleanly and is easy to work with.” **Stephan Kreimer, Master Dental Technician (MDT), Kreimer Dentallabor GmbH & Co. KG**

FULL CONTOUR CROWNS & COPINGS \$0.25 – 0.50 / PART

100 / build

9 h 34 min

3 UNIT BRIDGES \$3.00 – 5.00 / PART

70 / build

10 hr 50 min

MAXILLARY RPD \$3.00 – 5.00 / PART

7 / build

7 hr 28 min

Based on parts printed on the Form 2 at 50 µm layer height.



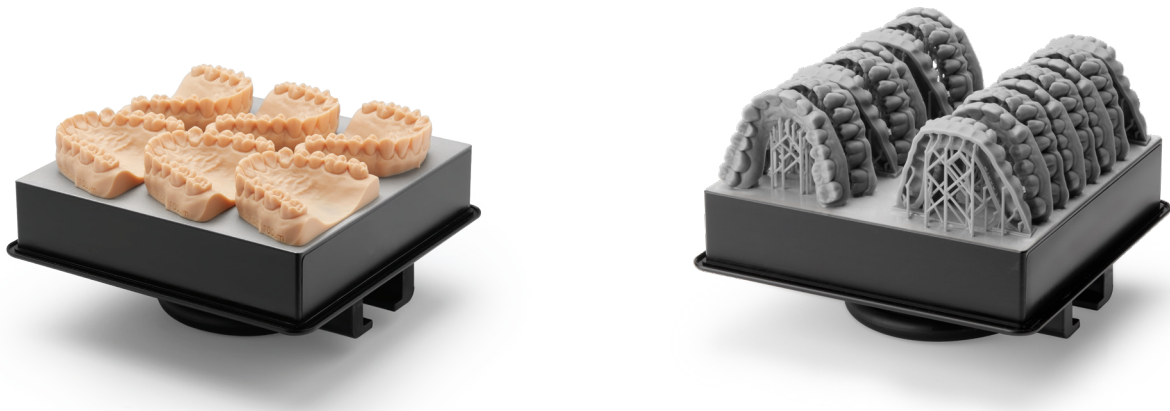
Orthodontic Models

Produce cost-effective vacuum-formed aligners, retainers, and splints in-house.

Streamline your workflow by 3D printing orthodontic models in-house and producing dental appliances with same-day delivery. With the Form 2 and Dental Model Resin or Grey Resin, quickly and accurately fabricate models to vacuum form clear aligners, retainers, splints, indirect bonding trays, or other devices. Or, add a separating layer and use the models to make Hawley retainers.

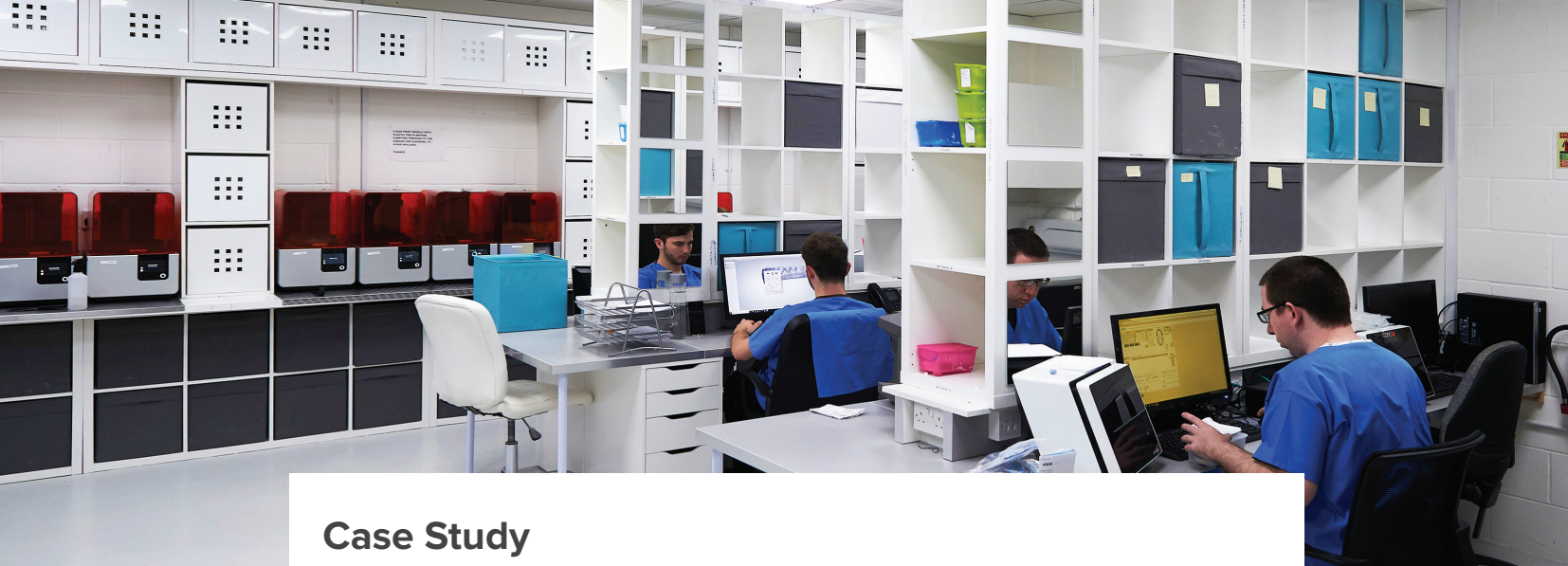
BENEFITS

- ✓ Orthodontic models for as little as \$1.50 per arch
- ✓ Ready to use products within one day
- ✓ Print up to 50 models in 24 hours with a single printer



FULL ARCH HORSESHOE ORTHODONTIC MODEL	\$1.50 – 3.00 / PART
16 / build (vertical orientation)	7 hr 51 min
7 / build (flat orientation)	3 hr 45 min
1 / build (flat orientation)	1 hr 19 min

Based on parts printed on the Form 2 at 100 µm layer height.



Case Study

Digital Orthodontics at Scale at the UK's Largest Ortho Lab

PROFILE

Ashford Orthodontics is the largest orthodontic laboratory in the United Kingdom, with a 12,000 square foot facility and over 50 employees, offering specialist orthodontic technical services to orthodontic and dental professionals.

CHALLENGE

The lab had to adopt digital workflows to cater to the growing number of digital customers, but the high cost and complexity of operating large-scale 3D printers meant that they struggled to make a viable case for digital in their business.

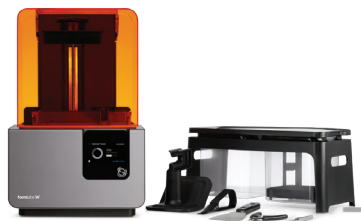
SOLUTION

Using a fleet of 12 Form 2 3D printers, Ashford Orthodontics has scaled up digital clear aligner and retainer production to 1,200 cases per month, and offers the appliances at the same price as their traditional counterparts, but with 24 hours shorter lead time.

"The Form 2 is very reliable. We call it a workhorse. We know when we go home at night that when we come in in the morning, everything will be printed. There's not going to be a failure; everything will be there. Because of that, we can build our business around them."

Sean Thompson, Adv.Prosth/Adv.Orth./DIP.PS.(dist) M.P.T. M.M.U./L.O.T.A. Ashford Orthodontics



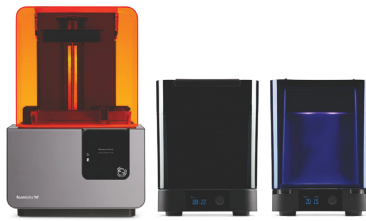


FORM 2 BASIC PACKAGE

All of the essentials to set up a 3D printing workflow with the Form 2.

Includes

1 Form 2 3D Printer	1 Resin Tank
1 Build Platform	1 Finish Kit
PreForm Software	1 Year Warranty



FORM 2 COMPLETE PACKAGE

An end-to-end printing and post-processing package with the support you need to print successfully.

Includes

1 Form 2 3D Printer	1 Resin Tank
1 Build Platform	1 Finish Kit
PreForm Software	1 Year Warranty
1 Form Wash	1 Form Cure
1 L Standard Resin	1 Year Pro Service Plan



COMPANY SOLUTIONS

Scale up your 3D printing operation. Work with our customer team to tailor a custom solution for design teams, internal service bureaus, batch production capabilities, and bulk resin usage for high volume printing needs.

PRINTER

Dimensions	35 × 33 × 52 cm 13.5 × 13 × 20.5 in
Weight	13 kg / 28.5 lbs
Operating Temperature	Autoheats to 35° C or 95° F Self-heating Resin Tank
Power Requirements	100–240 V 1.5 A 50/60 Hz 65 W
Laser Specifications	EN 60825-1:2007 certified Class 1 laser product 405 nm violet laser 250 mW laser
Connectivity	Wi-Fi, Ethernet, and USB
Printer Control	Interactive touch screen

PREFORM SOFTWARE

System Requirements	Windows 7 and up Mac OS X 10.7 and up
File Type	.STL or .OBJ

PRINTING PROPERTIES

Technology	Stereolithography (SLA)
Peel Mechanism	Sliding peel process with wiper
Resin Fill System	Automated cartridge system
Build Volume	145 × 145 × 175 mm 5.7 × 5.7 × 6.9 in
Layer Thickness (Axis Resolution)	25, 50, 100, 200 microns 0.001, 0.002, 0.004, 0.008 in.
Laser Spot Size (FWHM)	140 microns 0.0055 inches
Supports	Auto-generated Easily removable

FINISHING KIT

Includes

• Finishing tray	• Flush cutters
• Scraper	• Tweezers
• Pre- and post-rinse tubs	• Disposable nitrile gloves
• Rinse basket	• Removal tool
• Squeeze bottle	• Removal jig

The New Leader in Dental 3D Printing

Since 2016, Formlabs has been driving a new phase in digital dentistry. The introduction of the Form 2 revolutionized dental 3D printing, bringing reliability, high quality, and ease of use to the technology, at a fraction of the price.

200,000+ BIOCOMPATIBLE APPLIANCES

1,000,000+ DENTAL PRODUCTS PRINTED

10,000+ DENTAL PROFESSIONALS

Trusted by the Dental Industry

With 75+ support and service staff and 150+ engineers, Formlabs backs its products with the strongest team in 3D printing.

3shape

TEREC
Technical Research Corporation
NORTH AMERICA

HENRY SCHEIN
DENTAL

exocad

ASHFORD
ORTHODONTICS

DSD
Digital Smile Design

FULLCONTOUR

VITA

INTERDENT

Dentures

One of the first 3D printed dental prosthetics.

We're pushing the boundaries of dental technology—including making it possible to manufacture high-quality 3D printed dentures through a digital workflow that's streamlined, end to end. Clinical studies and workflow tests are currently in development at Formlabs and our partner dental labs.

Our dedicated team of engineers and technicians is focused on testing and developing new dental indications and workflows every day. With new materials and software in development, the dental ecosystem for the Form 2 will continue to grow.



COMING SOON

"After 8 years of 3D printing, using several different printers, I find the Form 2 3D printer to be the perfect choice for precision 3D printing, for models, surgical guides and ortho applications. The combination of precision, cartridge resin for quick change of printing resins, and low cost, make the Form 2 the perfect choice for any size dental laboratory."

Lee Culp, CDT, Sculpture Studios

Contact us today to discuss a solution for your dental office or dental lab.